

Amendments to the Specification:

Please replace paragraph [0021] on page 7 with the following replacement paragraph:

A facilitated transport membrane according to the present invention is prepared by coating a transition metal-polymer membrane consisting of a transition metal salt and a polymer on a porous supported membrane, in which the polymer has no functional group capable of forming a complex with the transition metal salt and does not dissolve but can physically disperse the transition metal salt. In particular, the polymer matrix allows the transition metal salt to be well dissociated because it has no functional group capable of forming a complex with a transition metal. In the facilitated transport membrane according to the present invention, the transition metal salt is uniformly dispersed in the polymer matrix on the molecular scale. The double bonds of alkenes selectively and reversibly react with the ion of transition metal in the facilitated transport membrane to facilitate the transport of alkenes. Consequently, the facilitated transport membrane can selectively separate alkenes.

Please replace paragraph [0024] on page 7 with the following replacement paragraph:

The facilitated transport membrane according to the present invention comprises a transition metal salt-polymer membrane and a porous supported membrane supporting the transition metal salt-polymer membrane, in which the polymer constituting the transition metal salt-polymer membrane has no functional group capable of forming a complex with the transition metal salt and does not dissolve but can physically disperse the transition metal salt. The facilitated transport membrane is characterized in that its permeance and selectivity to alkene hydrocarbons is high and in that the transition metal ion in the transition metal salt-polymer membrane maintains its activity as a carrier for alkene hydrocarbons even under long-term dry operating conditions.

Please replace the Abstract of Disclosure on page 25 with the following replacement paragraph:

The present invention relates to a facilitated transport membrane for separation of alkene hydrocarbons from hydrocarbon mixtures, comprising a porous supported membrane and a transition metal salt-polymer membrane consisting of a transition metal and a polymer, in which the transition metal salt does not chemically react with the polymer but physically dispersed within the polymer which has no functional group capable of forming a

complex with the transition metal salt. The facilitated transport membrane according to the present invention is prepared by forming a solid transition metal salt-polymer membrane consisting of a transition metal salt and a polymer capable of dispersing the transition metal salt on the molecular ~~scale~~; scale, and coating the solid membrane on a porous supported membrane with good permeance and superior mechanical strength. ~~In particular, the polymer matrix allows the transition metal salt to be well dissociated because it has no functional group capable of forming a complex with a transition metal. The facilitated transport membrane is characterized in that its permeance and selectivity to alkene hydrocarbons is high and in that the transition metal ion in the transition metal salt-polymer membrane maintains its activity as a carrier for alkene hydrocarbons even under long term dry operating conditions.~~

Please replace paragraph [0039] on page 12 with the following replacement paragraph:

One of the methods is a conventional method comprising the steps of dissolving a polymer and a transition metal salt in a liquid solvent to obtain a coating solution; coating the coating solution on a porous supported membrane; and drying the resultant product. Any liquid solvent that dissolves a polymer and a transition metal but does not impair a porous supported membrane ~~can use~~ can be used in the method.

Please replace paragraph [0044] on page 12 with the following replacement paragraph:

Then, 0.264 g of silver tetrafluoroborate (AgBF_4 , 98%, Aldrich Co.), 0.280 g of silver perchlorate (AgClO_4 , 99.9%, Aldrich Co.), 0.347 g of silver trifluoromethane sulfonate (AgCF_3SO_3 or AgTf , 99+%, Aldrich Co.) or 0.465 g of silver hexafluoroantimonate (AgSbF_6 , 98%, Aldrich Co.) were added to the respective four solutions to obtain four solutions of polymer:silver ion=2:1 in mole ratio. The resulting respective solutions were coated on respective four polyester porous membranes (track etched membrane, 0.1 μm polyester, Whatman) by using a Mayer bar. The respective thickness of substantial separation ~~layers of~~ layers determined by a high resolution electron microscope (SEM) was about 2 μm . The separation membranes thus prepared were completely dried in a dry oven for 2 hrs and a vacuum oven for 48 hrs at room temperature.

Please replace paragraph [0054] on page 17 with the following replacement paragraph:

0.3 g of polyethylene-co-propylene (EPR, $M_w=170,000$, Aldrich Co.) was dissolved in 9.7 g of tetrahydrofuran (THF) to obtain a uniform and clear polymer solution (polymer concentration=3 wt %). The polymer solution was coated on a porous polyester membrane (track etched membrane, 0.1 μm polyester, Whatman) using a Mayer bar. The membrane thus prepared was completely dried in a dry oven for 2 hrs and a vacuum ~~over for~~ oven for 24 hrs at room temperature.

Please replace paragraph [0060] on page 19 with the following replacement paragraph:

The membranes were evaluated on separation performance over time using ~~using~~ a propylene/propane mixture (50:50 vol %) at room temperature. Table 7 below shows the permeance of propylene and propane.

Please replace paragraph [0063] on page 20 with the following replacement paragraph:

The permeance of a permeated gas was determined with a soap-bubble flow meter, and the composition ~~ratio~~ ratio was determined with gas chromatography to evaluate the long-term operation performance. Also, a poly(2-ethyl-2-oxazole) (POZ)/AgBF₄ membrane having a functional group containing oxygen, which is not according to the present invention, was evaluated on a long-term operation performance as described above. The results are presented in Table 8 below.

Please replace paragraph [0065] on page 21 with the following replacement paragraph:

The facilitated transport membrane prepared according to the present invention exhibits substantially high selectivity to alkene hydrocarbons, which is superior to the prior selectivity to alkene hydrocarbons. Furthermore, the present invention does ~~eliminates~~ eliminate problems associated with a polymer matrix having a functional group containing oxygen and/or nitrogen, such as reduction of a transition metal ion to a transition metal.